

IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of the claims in the application:

1. (Original) A method for using timing information as at least one input parameter for a function performed in a local device comprising steps for:

transmitting a message from the local device to a remote device via an ultra wide band (UWB) wireless medium;

receiving a response from said remote device via said UWB wireless medium;

determining an amount of time between said transmitting step being executed and said receiving step being executed; and

performing a function in said local device with said amount of time being said at least one input parameter.

2. (Original) The method of Claim 1, wherein said transmitting step and said receiving step are performed in accordance with a Media Access Control (MAC) protocol.

3. (Original) The method of Claim 1, further comprising determining a distance from said local device to said remote device based on said amount of time, wherein said step of performing a function in said local device comprises performing said function based on said distance determined.

4. (Original) The method of Claim 3, wherein:

said step of determining an amount of time includes substeps of:

marking as a first time when said message is transmitted from the local device,
marking as a second time when said response is received in said receiving step,
and

determining a difference between said first and second times;

said step of determining a distance includes:

determining a processing delay that corresponds to a delay in time between when
the remote device receives the message and when the remote device transmits said response,

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determining a round trip time by subtracting said processing delay from the
difference between said first and second times, and

multiplying one half of said round trip time by a speed of transmission over the
UWB wireless medium.

5. (Original) The method of Claim 4 wherein said step of determining a processing delay
comprises receiving at said local device said processing delay from said remote device.

6. (Original) The method of Claim 4, wherein said step of determining a processing delay
comprises:

receiving at said local device a device type identifier from said remote device; and

obtaining a predetermined delay related to said device type from a look up table stored in
said local device.

7. (Original) The method of Claim 3, wherein said step of performing a function in said local device comprises communicating with said remote device based on said distance determined.

8. (Currently Amended) ~~The method of Claim 7,~~ A method for using timing information as at least one input parameter for a function performed in a local device comprising steps for:

transmitting a message from the local device to a remote device via an ultra wide band (UWB) wireless medium;

receiving a response from said remote device via said UWB wireless medium;

determining an amount of time between said transmitting step being executed and said receiving step being executed;

performing a function in said local device with said amount of time being said at least one input parameter; and

determining a distance from said local device to said remote device based on said amount of time,

wherein said step of performing a function in said local device comprises performing said function based on said distance determined,

wherein said step of performing a function in said local device comprises communicating with said remote device based on said distance determined, and

wherein said step of communicating with said remote device comprises substeps of:

setting an authentication criteria in said local device;

comparing said authentication criteria with said distance between the local device and the remote device;

enabling communications with said remote device if said distance satisfies said authentication criteria; and

blocking communications with said remote device if said distance does not satisfy said authentication criteria.

9. (Original) The method of Claim 8, further comprising steps of:

updating distance information after a predetermined time; and

enabling or disabling communications to said remote device based on the updated distance information.

10. (Original) The method of Claim 8, further comprising steps of:

updating distance information only when communications to said remote device are blocked; and

enabling communications with said remote device based on the updated distance information.

11. (Original) The method of Claim 7, wherein said step of communicating with said remote device comprises substeps of:

determining a position of said remote device; and

selectively enabling communications with said remote device based on said position of said remote device.

12. (Original) The method of Claim 11, wherein said step of determining a position of said remote device comprises substeps of:

determining another distance, from said local device to a reference point;
receiving information from said remote device indicating a third distance, from the remote device to the reference point; and
triangulating the position of the remote device based on said distance from the local device to the remote device, said another distance from the local device to the reference point and said third distance from the reference point to the remote device.

31 13. (Original) The method of Claim 12, further comprising steps of:
displaying a positional map including display indicators that represent said local device and said remote device on a display of said local device;
updating after a predetermined time positional information for said remote device; and
changing a display position of said remote device on said positional map after said updating step is performed.

14. (Original) The method of Claim 13, wherein said step of enabling communications with said remote device based on said position of said remote device comprises substeps of:

inputting a selection input at a screen position on said display;
determining whether the selection input corresponds to said display position for said remote device; and
enabling communications with said remote device if the selection input corresponds to said display position for said remote device.

15. (Original) The method of Claim 14, wherein said step of inputting a selection input at a screen position on the display comprises inputting said selection input on a touch screen.

16. (Original) The method of Claim 14, further comprising a step of indicating on said display whether said remote device is enabled.

17. (Original) The method of Claim 11, wherein said step of determining a position of said remote device comprises substeps of:

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determining distances from said local device to a plurality of reference points;

receiving information from said remote device indicating respective distances between the remote device to each of said plurality of reference points and distances between each of said plurality of reference points; and

triangulating the position of the remote device based on said distance from the local device to the remote device, said respective distances from the local device to the plurality of reference points and said distances from the remote device to each of said plurality of reference points and between each of said plurality of reference points.

18. (Original) The method of Claim 17, wherein said plurality of reference points comprises first, second, third, and fourth reference devices located in quadrature or management relative to a center point of an area in which the local device is located, said method further comprising steps of:

receiving information from each reference device about its respective location;

obtaining direction information about the direction in which the local device is facing,
and

displaying a positional map including said local device, said remote device and said
reference devices on a display of said local device, wherein said positional map is oriented on the
display with the reference point that the local device is facing at a top center location of the
display.

BI 19. (Original) The method of Claim 7, wherein said step of communicating with said
remote device comprises engaging in secure communications with said remote device based on
distance.

20. (Original) The method of Claim 1, wherein
said step of transmitting a message further includes transmitting a message from a local
device to a plurality of remote devices within a communicating area of said local device via said
UWB wireless medium;

said step of receiving a response further includes receiving a response from each of said
plurality of remote devices via said UWB wireless medium;

said step of determining a round trip time further includes determining a round trip time
between transmitting said message and receiving of said response for each of said plurality of
remote devices; and

said step of performing a function in said local device includes performing a function in
said local device based on said round trip times determined.

21. (Original) The method of Claim 20, further comprising:

establishing a unique communications link from said local device to each of said remote devices using a Media Access Control (MAC) protocol; and

determining a distance from said local device to each linked remote device based on said round trip times determined, wherein said step of performing a function in said local device based on the round trip times comprises enabling communications with said remote devices based on said distances determined.

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determining a distance from said local device to another remote device.

23. (Original) The method of Claim 22, further comprising steps of:

using a directional antenna to identify a respective position, of said remote device and said another remote device.

24. (Original) The method of Claim 23, wherein said using a directional antenna includes using a multi-element antenna.

25. (Original) The method of Claim 23, wherein said using directional antenna includes rotating said local device.

26. (Original) The method of Claim 22, further comprising a step of switching between antenna elements to identifying respective positions of said remote device and said another remote device.

27. (Currently Amended) A communications device comprising:

an ultra wide band (UWB) transceiver configured to:

transmit a message from the communications device to a remote device via a UWB wireless medium, and

31 receive a response from said remote device via said UWB wireless medium;

a memory device having embedded therein data related to using timing information as at least one input parameter for a function performed in the communication device; and

a processor in communication with said memory device, said processor configured to:

determine an amount of time between said transmitting of said message and said receiving of said response, and

perform a function in said ~~local~~ communications device with said amount of time being said at least one input parameter.

28. (Original) The communications device of Claim 27, wherein said transceiver is configured to transmit said message and receive said response in accordance with a Media Access Control (MAC) protocol.

29. (Currently Amended) The communications device of Claim 27, wherein said processor is further configured to:

determine a distance from said ~~local~~ communications device to said remote device based on said amount of time, and

perform said function based on said distance determined.

30. (Original) The communications device of Claim 29, wherein said processor is configured to perform said function by causing said communications device to communicate with said remote device based on said distance determined.

BI 31. (Original) The communications device of Claim 30, wherein said processor is further configured to:

determine a position of said remote device using said distance determined, and selectively enable communications with said remote device based on said position of said remote device.

32. (Original) The communications device of Claim 30, wherein processor is configured to perform said function by causing said communication device to communicate with said remote device by secure communications with said remote device based on said distance determined.

33. (Original) The communications device of Claim 29, wherein said processor is further configured to:

determine a distance from said communications device to another remote device; and

use a directional antenna to identify a respective position, of said remote device and said another remote device.

34. (Currently Amended) A communications device comprising:

means for transmitting a message from the communications device to a remote device via an ultra wide band (UWB) wireless medium;

means for receiving a response from said remote device via said UWB wireless medium;

means for determining an amount of time between said transmitting of said message and said receiving of said response; and

BI means for performing a function in said ~~local~~ communications device with said amount of time being at least one input parameter used to perform said function.

35. (Original) The communications device of Claim 34, wherein said means for transmitting and said means for receiving comprise means for transmitting and receiving in accordance with a Media Access Control (MAC) protocol.

36. (Currently Amended) The communications device of Claim 34, further comprising:

means for determining a distance from said ~~local~~ communications device to said remote device based on said amount of time; and

means for performing a function in said communications device by performing said function based on said distance determined.

37. (Original) The communications device of Claim 36, wherein said means for performing a function in said communications device comprises means for communicating with said remote device based on said distance determined.

38. (Original) The communications device of Claim 37, wherein said means for communicating with said remote device comprises:

- means for determining a position of said remote device; and
- means for selectively enabling communications with said remote device based on said position of said remote device.

BI 39. (Original) The communications device of Claim 37, wherein said means for communicating with said remote device comprises means engaging in secure communications with said remote device based on said distance determined.

40. (Original) The communications device of Claim 36, further comprising:

- means for determining a distance from said communications device to another remote device; and
- means for using a directional antenna to identify a respective position, of said remote device and said another remote device.

41. (Currently Amended) A computer readable medium containing program instructions for executing on a communications system, which when executed by the communications system, cause the communications system to perform the steps of:

transmitting a message from the ~~local device~~ communication system to a remote device
via an ultra wide band (UWB) wireless medium;

receiving a response from said remote device via said UWB wireless medium;

determining an amount of time between said transmitting step being executed and said
receiving step being executed; and

performing a function in said communications device with said amount of time being at
least one input parameter used to perform said function.

31 42. (Original) The computer readable medium of Claim 41, wherein the communications
system is further caused to perform said transmitting and receiving steps in accordance with a
Media Access Control (MAC) protocol.

43. (Original) Computer readable medium of Claim 41, wherein the communications
system is further caused to perform said step of performing a function in said communications
device by performing said function based on said distance determined.

44. (Original) Computer readable medium of Claim 43, wherein the communications
system is further caused to perform said step of performing a function in said communications
device by communicating with said remote device based on said distance determined.

45. (Original) Computer readable medium of Claim 44, wherein the communications
system is further caused to perform said step of communicating with said remote device by:
determining a position of said remote device; and

selectively enabling communications with said remote device based on said position of said remote device.

46. (Original) Computer readable medium of Claim 44, wherein the communications system is further caused to perform said step of communicating with said remote device by engaging in secure communications with said remote device based on distance.

47. (Original) Computer readable medium of Claim 43, wherein the communications system is further caused to perform steps of:

determining a distance from said communications device to another remote device; and
using a directional antenna to identify a respective position, of said remote device and said another remote device.